

## **AMENDMENTS TO THE CLAIMS**

### **Claims 1-5 (Cancelled)**

**Claim 6 (Currently Amended)** A microchamber for nerve cell culture comprising:  
a plurality of electrode patterns on a substrate for measuring a potential change of nerve cells;  
a plurality of regions isolated from each other by compartment walls over each electrode located in the electrode patterns for confining a nerve cell; and  
an optically transparent semipermeable membrane laid over the regions;  
wherein the regions are located corresponding one-to-one on each electrode located in the electrode patterns,and  
wherein the compartment walls are discontinuous so that the nerve cells are capable of forming a cell network, and,  
wherein laminin or collagen is applied to the surface of the electrode.

**Claim 7 (Previously Presented)** The microchamber for nerve cell culture according to Claim 6, wherein stimulation to the nerve cells and measurement of a potential change of the nerve cells are carried out by the same electrode located in the electrode patterns.

**Claim 8 (Previously Presented)** The microchamber for nerve cell culture according to Claim 6, wherein the electrode patterns are optically transparent electrodes.

**Claim 9 (Previously Presented)** The microchamber for nerve cell culture according to Claim 6, wherein the electrode patterns are at least three electrodes capable of carrying out measurement independently.

**Claim 10 (Previously Presented)** The microchamber for nerve cell culture according to Claim 6, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

**Claim 11 (Previously Presented)** The microchamber for nerve cell culture according to Claim 6, wherein the number of regions of the cells isolated each other by the plurality of compartment walls is three or greater.

**Claim 12 (Cancelled)**

**Claim 13 (Previously Presented)** A microscopic system for cultivation and measurement of nerve cells by using a microchamber for nerve cell culture as claimed in Claim 6, which comprises fixing a substrate of the microchamber for nerve cell culture to a holder; mounting the holder on a multielectrode primary amplifier attached to a microscope stage, observing the nerve cells in the microchamber for nerve cell culture via a microscope, and measuring and recording a change of the state of the nerve cells by an information recording apparatus based on the observation data thus obtained.

**Claim 14 (Previously Presented)** A microscopic system according to Claim 13, wherein the nerve cells and the information recording apparatus are insulated at a ground level in the multielectrode primary amplifier by optically connecting them.

**Claim 15 (Previously Presented)** The microchamber for nerve cell culture according to Claim 7, wherein the electrode patterns are optically transparent electrodes.

**Claim 16 (Previously Presented)** The microchamber for nerve cell culture according to Claim 7, wherein the electrode patterns are at least three electrodes capable of carrying out measurement independently.

**Claim 17 (Previously Presented)** The microchamber for nerve cell culture according to Claim 8, wherein the electrode patterns are at least three electrodes capable of carrying out measurement independently.

**Claim 18 (Previously Presented)** The microchamber for nerve cell culture according to Claim 15, wherein the electrode patterns are at least three electrodes capable of carrying out measurement independently.

**Claim 19 (Previously Presented)** The microchamber for nerve cell culture according to Claim 7, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

**Claim 20 (Previously Presented)** The microchamber for nerve cell culture according to Claim 8, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

**Claim 21 (Previously Presented)** The microchamber for nerve cell culture according to Claim 15, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

**Claim 22 (Previously Presented)** The microchamber for nerve cell culture according to Claim 9, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

**Claim 23 (Previously Presented)** The microchamber for nerve cell culture according to Claim 16, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

**Claim 24 (Previously Presented)** The microchamber for nerve cell culture according to Claim 17, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.

**Claim 25 (Previously Presented)** The microchamber for nerve cell culture according to Claim 18, wherein the compartment walls are formed by applying a photocurable resin onto the electrode patterns and partially removing the photocurable resin.